



# The connection between female literacy and technology adoption in rural societies: Exploring female literacy and technology adoption for promoting the usage of water-based toilets in India



Pooja Bhardwaj <sup>a, b, \*</sup>, Rainy Gupta <sup>a, b</sup>, J.P. Shukla <sup>b</sup>, Deepti Mishra <sup>a, b</sup>, Manish Mudgal <sup>a, b</sup>, Sudhir Sitaram Amritphale <sup>b</sup>

<sup>a</sup> Academy of Scientific and Innovative Research - AcSIR, AMPRI, India

<sup>b</sup> Council of Scientific and Industrial Research, Advanced Materials and Processes Research Institute, CSIR-AMPRI, Hoshangabad Road, Bhopal, MP 462064, India

## ARTICLE INFO

### Article history:

Received 26 February 2017

Accepted 31 March 2017

Available online 28 April 2017

## 1. Introduction

Efforts for rural development and improvement in their living standards by different developmental schemes in India have met with varying degrees of success. There are different issues in rural communities which act as barriers for rural development. According to WHO/UNICEF 2014 report, around one billion people in the world still practice open defecation, and as per WHO 2012 report, over 600 million people are from India [1,2]. Open defecation and poor sanitation causes contamination of soil and water. Hygienic disposal of human excreta is a major issue faced by rural India and other communities. A simple technology solution to this problem is the toilet.

This simple technology adoption is not only a matter of having a good infrastructure with proper sanitation and hygienic conditions, it's important for the economic development [3]. Human faeces are the primary source of pathogens, which gets transmitted by different vectors like flies, water, soil, air etc. and contaminates water and food. These pathogens like bacteria, virus, protozoa etc. leads to various diseases like diarrhea, dehydration, cholera, hookworm, ringworm etc. Children are more vulnerable to such diseases which more or less directly influencing their overall growth [4,5]. As per the WHO report, children have an

underdeveloped immune system which results in an increase in their mortality rate due to such diseases [6,7]. About 10% of such diseases can be avoided just by being hygienic and using proper sanitation. Using toilets and adopting proper hygienic conditions prevents society from these diseases and will ultimately result in a healthy population [8]. More than half of rural people are dependent on farming as a source of income and rural India is not exception. Rural India is rich in natural vegetation and atmosphere as it is less polluted than urban/metro cities. However, open defecation results in a decline in the aesthetic value of the communities and also leads to degradation of the environment. Furthermore, it makes it difficult for people to live due to the unpleasant odor in the environment and unsanitary conditions.

With respect to this public and environment health concern, Swachh Bharat Mission (Gramin), was launched by the Indian government to promote cleanliness and elimination of open defecation by 2019 [9,10]. Apart from this, to terminate the practices of open defecation, the former government under Nirmal Bharat Abhiyan (2012) constructed many toilets to change the attitude of rural masses towards open defecation. It is critical to note that development of villages in any country not only depends upon infrastructure development, but it also depends on the availability of basic living requirements like proper toilets with acceptable sanitation conditions. Although, having various schemes and developmental plans for rural communities, a considerable proportion of rural people in India still practice open defecation which is matter of government concern.

Previously, various social benefits have been investigated by different researchers in relation to female literacy and, based on this research, women were identified as critical agents of behavioral change in the society [11,12]. In the current study, we suggest that the role of literate women is considered of prime importance in surmounting the problem of open defecation in rural India and play a key role in basic technology adoption in rural societies. Literate women focus on raising healthier families with improved hygienic and sanitation practices they have a direct influence on the

\* Corresponding author. Academy of Scientific and Innovative Research - AcSIR, AMPRI, India.

E-mail address: [bhardwajpooja851@gmail.com](mailto:bhardwajpooja851@gmail.com) (P. Bhardwaj).

mind-set of the family members. Their literacy directly or indirectly contributes to ensuring family and other society members understand the importance of cleanliness and usage of toilets for hygiene.

In this study, we quantitatively explored the number of toilets, their usage percentage and percentage of rural masses practicing open defecation in spite of having well-constructed in house toilets in a small village Nador, district Raisen, Madhya Pradesh. We closely examined female literacy in this context. This rural study is the part of CSIR-800 activity (Council of Scientific and Industrial Research, India) and was successfully conducted to know and to find out different reasons for the non-usage of available toilets in rural villages. The most common source for gathering information in this study was interviews of the villagers as well as careful observation and triangulation using other data collected. The objectives of this study included answering the following research questions: 1) How many toilets are constructed in the village under governmental scheme and why do rural people not use them and 2) What is the role of female literacy in promoting healthy and hygienic sanitation in village. It was very challenging to find the answers to these question because of the awkward subject and introverted rural temperament. The data collected provided valuable information and insight in this understudied but foundational area of socio-economic development involving basic technology adoption.

## 2. Theoretical basis

Examining factors which influence the adoption of technology is crucial. In our previous study, we explained in detailed that basic (not necessarily high-tech) technology adoption brought revolutionary changes in societies and provided solutions for many social problems [13]. Generally people acquire and maintain a typical behavior about something and continue this stereotyped behavior not understanding its ill effects. Therefore, it becomes essential to raise awareness of the importance of required social changes particularly in areas of limited education. This is not suggesting choices are removed but instead, through education, the ability to choose is enhanced. According to Social Cognitive Theory, social learning depends either/both on past and/or other experience. This theory provides a useful framework for understanding behavioral patterns [14,15] and adopts a cognitive prospective to moral phenomenon. As stated by Bandura (1986), moral thinking is governed by multidirectional rules which are used to judge several social conduct. Depending upon those rules or standards, the decision ingredients are given more or less importance and cognitively processed as per past and future events. Bandura describes the self-regulatory mechanism as an integral part for conception of moral agency and stated that the moral conduct of society is regulated and motivated through ongoing practices and abstract reasoning [16]. Self-efficacy, i.e. a person's confidence in his/her ability to perform a certain behavior is considered a key construct of this theory. He further explains that some forms of behavior are advantageous but counterproductive for others and without some accepted moral codes, people would ignore each other's welfare and rights, hence, exercise of self-regulation possessed a central role in motivation of moral codes. Application of social cognitive theory in this study could help understand and motivate the rural population regarding unhygienic excretion practices. The question is, what role does women's education play? Self-efficacy of rural community is essential regarding this but what is the most effective way to proceed in introducing basic technology?

## 3. Methodology

### 3.1. Research site

Qualitative case study methodology was used in this research. Methodologically, this study involved interviews, careful observation and triangulation with other data. This study was conducted in a small village Nador, located in Goharganj Tehsil of Raisen district, Madhya Pradesh, India. It has 175 villages in total [17]. It is located 49 km towards South from Raisen District headquarters, which is around 39 km from state capital, Bhopal. This village was chosen because in terms of demographics, infrastructure and proximity to an urban area it could easily represent any village in India.

### 3.2. Methods

A general sketch about the habitat and environment conditions was drawn through a general walk around the village. The existing sanitation and drainage technology was carefully examined to observe its effectiveness and efficiency.

After a careful walkthrough examination, information was collected through an interview of the villagers to get the in-depth knowledge of the existing conditions. A well-developed questionnaire was used to facilitate participation from rural people so that they could create and acknowledge their information in a visualized format. Particular care was taken to develop the un-biased questionnaire and to get informed consent from all participants. This questionnaire aimed to investigate the percentage of rural people practicing open defecation and the consequences of existing conditions on the health. It also aimed to find out the reasons why people are not using constructed in-house toilets and how and to which extent literate female members can encourage other family members to terminate open defecation practices. Data was collected from the entire village. The respondents were asked to assemble and the data was recorded in the form of a spreadsheet, which was verified with their help. The survey was carried out over three days. Out of 175 houses, 60 houses were surveyed individually to collect the data. The respondents included males, females and children so as to explore the sanitation conditions of the village including schools. Some females were reluctant to discuss the sanitation and open defecation issues. So, they were interviewed separately to address these concerns and understand the problems faced by them due to open defecation and unhygienic sanitation practices.

In the second phase of the questionnaire, data was collected by administrators of the village to explore the drainage system and sanitation conditions of public places like community toilets, hospitals, schools etc. It was very important to know the existing sanitary conditions of the village which has an impact on health of the people [18]. Therefore, questions were asked to understand the present physical conditions.

## 4. Data analysis and interpretation

The collected data was assembled, analyzed and coded to identify the status of sanitary conditions and associated issues. The data revealed that the government of India is making an effort to improve the sanitation situation by providing subsidies for infrastructure [19]. However, the majority of rural people were still deprived of this basic need and many people were forced to follow open defecation. Consistency in the responses of the villagers and conditions observed in villages helped us conclude that more

Download English Version:

<https://daneshyari.com/en/article/4941773>

Download Persian Version:

<https://daneshyari.com/article/4941773>

[Daneshyari.com](https://daneshyari.com)